

fibers [fibres].

18. (Amended) The [A] A structural reinforcement as claimed in Claim 10 or 11, [Claims 10 to 17] wherein the preform includes a textile comprising a hybrid yarn of commingled said structural fibers [fibres] and said thermoplastic fibers [fibres] or a yarn of said structural fibers [fibres] and a yarn of said thermoplastic fibers [fibres].

19. (Amended) A method of making a composite comprising forming a preform by combining dry structural fibers [fibres] with dry non-structural thermoplastic fibers [fibres] in an assembly to provide a structural component, injecting or infusing a liquid resin into the structural component, and curing the liquid resin [component].

20. (Amended) The [A] method as claimed in Claim 19, wherein a resin curing agent is added to the structural component prior to the liquid resin [component].

21. (Amended) The [A] method as claimed in Claim 20, wherein the curing agent is encapsulated in a material which melts at a first temperature and wherein the curing step involves raising a [the] temperature to the first temperature to activate the resin curing agent.

22. (Amended) The [A] method as claimed in any one of Claims 19 to 21, wherein the curing step is at least partially carried out at a temperature below the melting point of the thermoplastic fibers [fibres].

23. (Amended) The [A] method as claimed in any one of Claims 19 to 21, [22]
wherein the preform includes textile is provided in layers and a veil is provided between at least
one adjacent pair of layers prior to addition of the resin, the veil comprising a thin layer of woven
or non-woven material.

24. (Amended) The [A] method as claimed in Claim 23, further comprising
distributing binder material on or in the veil.

25. (Amended) The [A] method as claimed in any one of Claims 19 to 21, [24]
wherein the resin injection process is resin transfer molding [moulding] or composite resin
injection molding [moulding].

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COMPOSITE COMPRISING STRUCTURAL AND NON STRUCTURAL FIBERS

The present invention relates to a composite and a method of composite manufacture.

Composite materials generally comprise an array of reinforcing fibres in a resin matrix. The present global industries which utilise composite structures, for example the aerospace industry, predominantly use conventional uni-directional and fabric-based preregs. Such preregs are typically made by drawing continuous rovings of reinforcing fibres, or fabrics, through a bath of molten resin or resin dissolved in solvents. The prepreg is then formed into a desired shape, loaded into a mould which is closed and heated to cure the resin.

Over the last five to seven years an alternative technology for manufacturing composite parts has emerged which is generally termed liquid composite moulding. In liquid composite moulding, a dry fibrous reinforcement is loaded into a mould or tool and the resin is injected or infused into the fibres and cured.

The reinforcement is termed a "preform" which term is well known to those skilled in the art of composite as indicating an assembly of dry fibres that constitutes the reinforcement component of a composite in a form suitable for use in a liquid composite moulding process. A preform is typically an assembly of various textile forms such as fabrics, braids or mats, tailored or shaped as necessary, and is assembled as a specific operation prior to being placed into or on the mould tool.

Liquid composite moulding technologies, such as the RTM (resin transfer moulding) or vacuum infusion methods are perceived by many to be the solution to the problem of making composite parts in a number of intractable situations, such as large aerospace primary structures and high volume structural automotive components. The benefits that liquid composite moulding technologies are perceived to offer over conventional preregs are

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